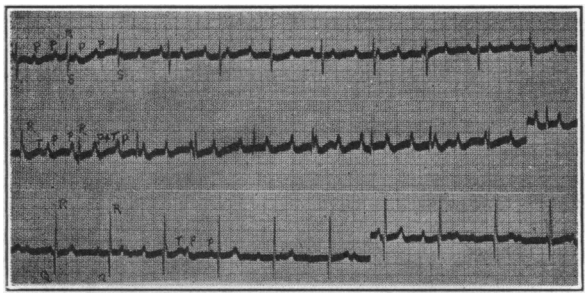

Fig. 2.—Electrocardiogram of D. P., age sixteen months, showing complete auriculoventricular dissociation, auricular rate 138, ventricular rate 58, in Lead II, with right ventricular preponderance.

gree of cyanosis present and the character and extent of the associated defects. The latter seem also to be determining factors in the prognosis. In three cases in which postmortem findings are available the condition has been found to be due to a developmental defect.[2] Prenatal endocarditis and myocarditis are also theoretically possible etiologic factors. The presence of rheumatic infection in the mother during her pregnancy thus adds interest to the case here presented.

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REFERENCES

1. Yater, Wallace M.: Am. J. Dis. Child., 38:112 (July), 1929. (This paper contains an extensive bibliography.)

2. Nicolson, Gertrude, Schulman, Harold I., and Green, Dorothy L.: Am. J. Dis. Child., 37:580 (March), 1929.

3. Anderson, G. H.: Northwest Med. J. 28:227 (May), 1929.

4. Brandenburg, K.: Med. Klin. Woch., 25:1464 (Sept.), 1929.

5. Leech, Clifton B.: Am. J. Dis. Child., 39:131 (Jan.), 1930.

6. Sclar, Meyer: Am. Heart J., 6:289 (Dec.), 1930.

7. Koenen, H. P. J.: Nederl. tijdschr. V. Genesh, 74, II, 6000 (Dec.), 1930.

PROCAIN INFILTRATION ANESTHESIA

REPORT OF CASE

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INFILTRATION anesthesia with procain hydrochlorid is generally so satisfactory and so free from objectionable reaction on the part of the patient that we are prone to lose sight of the possibility of intoxication occurring in the routine use of the drug in this manner. However, it is unfortunately true that even small doses of procain may cause serious or even fatal poisoning. It is probably true that in most of such patients, the anesthetic solution was introduced directly into the vein; but in some instances it is unlikely that this was true while in others, even if the injection were actually intravenous, the amount of the drug used was so small that the only reasonable explanation for the unfavorable reaction was an unusual susceptibility of the patient. Within the past few months, a case has occurred in our hospital where it was possible to demonstrate idiosyncrasy to procain, existing to such a high degree that the employment of this anesthetic, even for minor surgery, would have been a dangerous procedure. The following brief report gives the essential features of the case.

REPORT OF CASE

Mrs. C. E. came to the clinic of Green's Eye Hospital on April 9, 1931, because of excessive lacrimation of the right eye, which had persisted over a number of years. Three years previously she had visited another clinic and was given a subcutaneous injection of procain solution (amount and strength unstated), following which she became unconscious and remained in this state for eighteen hours.

Examination showed that the lids of the right eye were normal, except that the canaliculus had been slit. No secretion could be expressed from the sac. The left eye was entirely negative.

Several drops of a solution of cocain hydrochlorid were instilled into the right cul-de-sac and an attempt made to irrigate the lacrimal sac. No solution passed through the lacrimal duct and regurgitation occurred through both puncti.

Because of past history, three minims of two per cent solution of procain hydrochlorid were injected intradermally to test her susceptibility. Almost immediately a general reaction occurred, manifested by pallor, breathlessness, rapid pulse, and finally syncope. Recovery took place in about thirty minutes, but the patient complained of being nervous and shaky for the ensuing week. Later an intradermal injection of a small amount of 1:1000 solution of epinephrin hydrochlorid did not cause any untoward reaction, so that an epinephrin reaction was eliminated.

To open the lacrimal passages, anesthesia was of course necessary. The history of previous violent reaction to procain and our own observation as to the effect of intradermal injection of a very minute amount of the anesthetic eliminated the possibility of using it in this case. Upon consulting a surgical colleague of large experience, the employment of nupercain was suggested; and subsequently the intradermal test with 1:1000 solution of this drug was carried out on the patient with entire absence of toxic reaction. Reassurance being gained by this test, the tissues surrounding the right tear duct were infiltrated with about two cubic centimeters of a 1:1000 solution of nupercain, containing approximately 0.03 milligram epinephrin hydrochlorid. With this most satisfactory anesthesia was secured, and with an entire absence of toxic manifestation.

This case is interesting as illustrating a sensitivity to procain and the possibility of employing a chemically unrelated substance for safe production of anesthesia. Keyes and McLellan (*American Journel of Surgery,* Vol. LX, No. 1, p. 1, July 1930) report two cases where reactions regularly occurred following the use of procain hydrochlorid for caudal block but where nupercain solution producing satisfactory anesthesia did not give rise to any unfavorable symptoms.

It is most definitely not our intention to advise the routine employment of nupercain for infiltration anesthesia in place of procain, for it is quite possible that there are more cases where sensitivity to nupercain and not to procain exists; but this, in our opinion, may be satisfactorily determined by the intracutaneous or subcutaneous injection of a small amount of dilute solution of the drugs in question.

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